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ABSTRACT

Under the auspices of the Kentucky Council on Higher Education and with the aim of delineating issues in allied health education and making recommendations for alleviating 1975. The primary recommendations pertained to the development of a statewide plan for allied health education that would result in an articulated statewide system permitting entry and exit of prepared personnel at a variety of levels, and improve interinstitutional efforts to share resources. In 1978 the Council was awarded a grant from the Department of Health, Education, and Welfare to develop an articulated system of allied health education in six disciplinary clusters: clinical laboratory sciences, dental auxiliaries, nutrition/dietetics, rehabilitation therapy, radiological science, and respiratory therapy programs. All levels of programs within each cluster that exist in Kentucky are included in the system. The primary goal for each discipline advisory group is to develop a curriculum design for articulation within each level and each type of program in their cluster. A curriculum-based planning model was developed to accomplish this. Implementation will be planned in cooperation with the educational institutions providing input into the project. (Author/MSE)

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"Development of Articulation Models for Allied Health Statewide Planning"

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ABSTRACT

Development of Articulation Models for Allied Health Statewide Planning

Under the auspices of the Kentucky Council on Higher Education and with the aim of delineating issues in allied health education and making recommendations for alleviating the issues, an in-depth, two-year study was completed in 1975. The primary recommendations pertained to the development of a statewide plan for allied health education which would result in an articulated statewide system permitting entry and exit of prepared personnel at a variety of levels and improve interinstitutional efforts to share educational resources. In 1978 the Council was awarded a grant from the U.S. Department of Health, Education and Welfare to develop an articulated system of allied health educaton in six disciplinary clusters. These clusters include (1) clinical laboratory sciences, (2) dental auxiliaries, (3) nutrition/dietetics, (4) rehabilitation therapy, (5) radiological science, and (6) respiratory therapy programs. All levels of programs within each disciplinary cluster which exist in Kentucky are included in the system. The primary goal for each discipline advisory group is to develop a curriculum design for articulation within each level and each type of program in their respective disciplinary cluster. A curriculum-based planning model was developed to accomplish this goal. Implementation will be planned in cooperation with the educational institutions providing input into the project.

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M. Joanne Lang received a masters of science degree in Health Science Education and Evaluation from the State University of New York at Buffalo. Prior to this she worked as a clinical dietitian specialist in several health care facilities. Her current position as Higher Education Specialist for the Council on Higher Education, Frankfort, Kentucky, involves the development and implementation of a model articulated statewide system for allied health education which will provide career mobility in selected allied health disciplines. Her primary responsibilities include the disciplines of nutrition/dietetics, physical therapy and occupational therapy.

Kathleen A. Carroll, RDH, MPH

Kathleen A. Carroll is currently a Higher Education Specialist with the Council on Higher Education, Frankfort, Kentucky. She is involved in increasing career mobility for Kentucky's dental auxiliaries through the Council's statewide allied health articulation project. She is also an instructor in the Continuing Education Program for dental auxiliaries at the University of Louisville. She received her education in dental hygiene and public health from the University of Minnesota. Her work background includes experience as a clinical dental hygienist and as a faculty member in the Department of Dental Hygiene at the University of Minnesota.

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Frederick R. Geiger received a B.S. from Hobart College and is completing his graduate project on Hyperbaric Oxygen Therapy for a M.S. in Health Education Professions from SUNY at Buffalo. He is a registered Respiratory Therapist who has spent six years in clinical medicine. Currently, he is a Higher Education Specialist for the Kentucky Council on Higher Education. His primary charge is to coordinate the work of both respiratory therapy and radiological science advisory groups as a component of the development and implementation of a model articulated statewide system for allied health education.

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Frances J. Morris is currently a Higher Education Specialist with the Commonwealth of Kentucky, Council on Higher Education, working with clinical laboratory sciences education articulation. She received a B.S. in Biology from the University of Alabama; was certified a medical technologist after completion of the St. Vincent Hospital School of Medical Technology Program in Birmingham, Alabama; received a M.A. in Health Care Education from Central Michigan University and a M.P.A. from the University of Kentucky. She is currently pursuing a Ph.D. in Studies in Higher Education at the University of Kentucky. Prior to her present position she has held positions as program director of an associate degree medical laboratory technician program, and has taught Certified Laboratory Assistants and Medical Technologists. Her publications area are in clinical laboratory sciences and consumer health education.

A Note of Appreciation

This presentation is dedicated to the Director, Dr. Elizabeth C. King and Assistant Director, Dr. Gary G. Breegle of the Kentucky Allied Health Project for their assistance and guidance which have catalyzed the progress of the project. The dedication is also to the many Kentuckians who have committed much time and energy as Discipline Advisory Group members, for without them the tasks inherent in articulation could never have been accomplished.

I. Introduction The Kentucky Allied Health Project (KAHP) is the result of a process that began in 1972. At that time, the Kentucky Revised Statutes strengthened the ability of the Council on Higher Education to act as a planning and coordinating body for public higher education. In order to better coordinate program development in the professional and technical health fields the Health Sciences Advisory Committee was created in October, 1972. The Committee was charged with developing recommendations for policies and plans for the future needs of allied health education.

The Health Sciences Advisory Committee appointed a task group, which in turn established "ad-hoc disciplinary study groups" in five major health areas. After one year of discussions and monthly meetings, a document emerged entitled, "The Part II, Allied Heaith Phase I Report, Planning for Health Sciences Education in Allied Health."

The report identified twelve allied health education issues in Kentucky and posed recommendations for their resolution. Specifically, issue No. 4 states,

> "The Limited Articulation and Coordination Among and Between Allied Health and Health Related Educational Programs Compromises the Extent to Which These Programs Meet Kentucky's Health Manpower and Service Needs."

To ameliorate this problem, the Council obtained a federal Special Project Grant to develop and implement a model articulated statewide system of allied health education. The system will provide horizontal and vertical career mobility in six allied health disciplinary clusters: (1) clinical laboratory sciences, (2) radiological sciences, (3) respiratory therapy, (4) dental auxiliaries, (5) nutrition/dietetics, and (6) rehabilitation therapy. Within each cluster all programmatic levels which exist in Kentucky are involved in the articulation design.

An articulation planning manual will ultimately be available from KAHP for other states and/or organizations recognizing the impact of the National Commission

on Allied Health Education (NCAHE) Report and desiring to learn from existing articulation endeavors. The manual will be enhanced by the annotated bibliography which the KAHP staff is currently compiling and will provide realistic direction from which to address the research, planning, implementation and evaluation components of the articulation process. Kentucky is the first state to make such a comprehensive effort to respond to issues in allied health education and practice. While KAHP results and recommendations will be specific for Kentucky, the project rationale, the methodologies used and selected issues encountered are generic to the articulation process (and not just to KAHP).

A. Organizational Structure of KAHP

Figure I represents the organizational structure of KAHP. A Discipline Advisory Group (DAG) was formed for each of the six (6) disciplinary clusters, involved in the project. Representation for the DAGs was sought from the following constituents involved in the various disciplines: (1) public colleges and universities, (2) independent colleges and universities, (3) vocational schools, (4) practicing clinicians, (5) professional organizations, (6) hospital based programs, (7) proprietary schools. The resulting groups, consisting primarily of program faculty, constitute the working nucleus of the articulation project.

After DAG membership was determined, a Technical Advisory Group was established. Members of the Technical Advisory Group were drawn from the DAGs, public colleges and universities, Health Systems Agencies, the Kentucky Hospital Association and the Kentucky Department for Human Resources.

The progress and products of the Discipline and Technical Advisory Groups are reviewed by the Allied Health Task Force. The task force comprises deans and directors from public colleges and universities, independent colleges and universities and the vocational education system; practicing clinicians and professional organizations are also represented. This representation ensures administrative involvement in the articulation planning process and any ensuing policies.

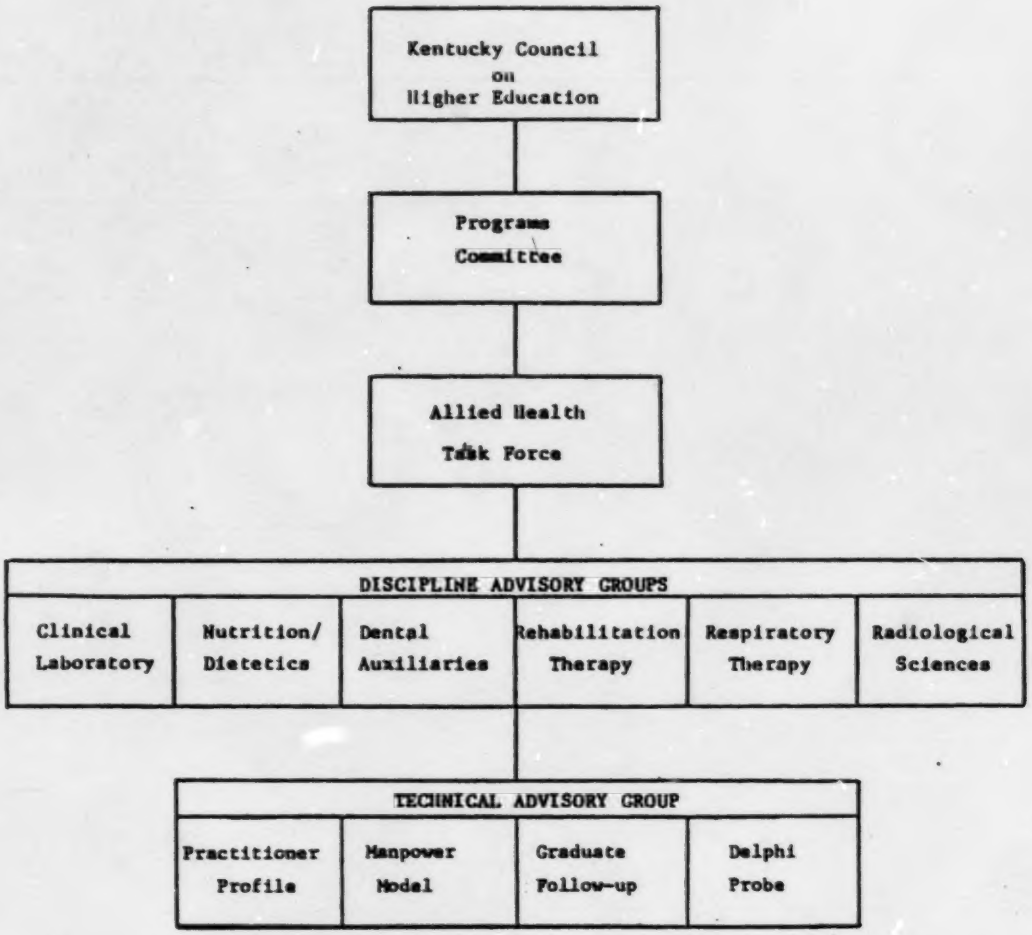

Figure 1. Organizational Structure of KAHP.

The Task Force will submit pertinent project results to the five-member Programs Committee of the Council on Higher Education. If the Committee accepts the results, it will present them to the entire Council for final approval.

B. Goal and Objectives of Discipline Advisory Groups

The goal of the discipline advisory groups is to develop a curricular design for articulation within each level and type of program in their disciplinary clusters. In order to accomplish this goal, each DAG addressed the following ten (10) objectives related to the articulation process.

1. Delineate tasks by level of practice within each discipline,
2. Identify educational objectives from delineated tasks to be included in each level of education,
3. Group objectives into units by similarity of content and degree of difficulty to produce an "articulation model",
4. Review and compare current curricular data from programs statewide to identify vertical and horizontal similarities and differences,
5. Evaluate current curricula in relation to the "articulation model" for appropriateness and flexibility in sequencing.
6. Review and compare current student transfer policies from programs statewide to identify similarities and differences,
7. Review and compare current admission policies from programs statewide to identify vertical and horizontal similarities and differences,
8. Design an articulation diagram for each discipline,
9. Identify facilitators and barriers to articulation in Kentucky,
10. Develop recommendations for phased implementation of articulation in Kentucky.

Figure 2 represents the interdependent components in the KAHP design that are identified in the objectives. To meet these objectives the Discipline Advisory Groups are addressing curricula, admission policies and transfer agreements in a manner reflecting the needs of their own discipline. The different methodologies being utilized by the various DAGs are fundamental to the groups' success.

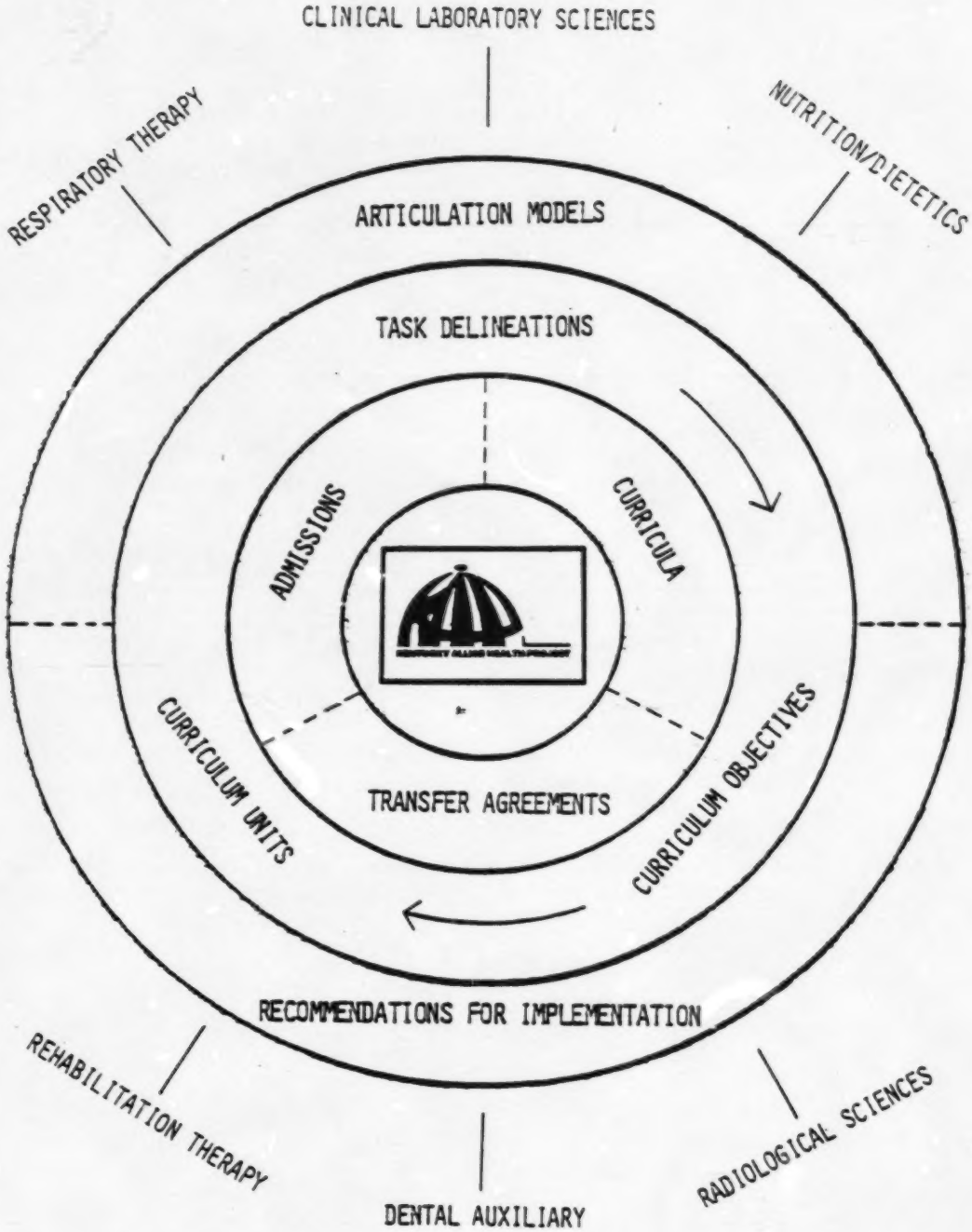

Figure 2. Selected interlocking components of KAHP.

However, a curriculum-based planning model was developed as the core method for each DAG to achieve KAHP objectives.

Consequential objectives of the overall project should also be considered here as they influence the utility of the final articulation model from each discipline and how each will interact within a statewide system of allied health education. A manpower model acceptable for statewide planning, a system of graduate follow-up, and an on-going profile of practitioners within the state have all been established as integral components of KAHP.

The implementation phase of KAHP will undoubtedly bear out the significance of these components to the success of the articulation process and statewide planning.

C. Evaluation of KAHP

Program Evaluation and Review Technique (PERT) is one means of managing the planning and evaluation of a project such as KAHP. By identifying activities or objectives necessary to reach the goals of the project, PERT provides a means of evaluating progress toward these goals.

Both the overall project and the individual Disciplinary Advisory Groups utilized PERT. Staff and Advisory groups identified the critical path activities and the parallel path activities for the project as well as for completing the work of each discipline. Periodic evaluation was then made possible. Slack time was utilized in the reallocation of personnel and resources, when necessary, and thus decreased time requirements and improve the probability of completing the project.

Some of the advantages of PERT include: (1) clear identification of interrelationships among project events, (2) more cost-effective utilization of personnel and resources, and (3) an increased probability of successful completion of the project.

ARTICULATION IN LEARNING

Articulation in learning is directed toward "educational content, educational processes and quality assurance mechanisms" according to the NCAHE Report. The Kentucky Allied Health Project addressed three issues fundamental to articulation: (1) the delineation dilemma in designing articulation models, (2) reviewing existing curricula and (3) identifying existing articulation.

1. The Delineation Dilemma. The design of an articulation model cannot be realized as practical without the support of an "acceptable" delineation of content by levels of practice within each disciplinary cluster. The delineation must be acceptable to those who will use the model and those who influence the model. Beyond the immediate realm of those who modify their curricula to accomodate articulation, are the national associations and accrediting bodies which also significantly influence the success of the models by their view of articulation and how those views are applied in the accreditation process.

The Respiratory Therapy and the Nutrition/Dietetics groups used the Health Services Mobility Study (HSMS) Method of Task Analysis and Curriculum Design. (Gilpatrick, 1977, Lang, 1980, Geiger, 1980) The HSMS methodology was used for two reasons: (1) Neither discipline had an acceptable and/or comprehensive delineation of their practices; and (2) it is a sophisticated, objective mechanism for delineation and curriculum development with unique components for continually updating delineation results in response to advancement in health care. The HSMS studies identified tasks per level of practice and provides academic guidelines to develop specific educational objectives from the task data.

The Clinical Laboratory Sciences, Dental Auxiliary and Radiological Sciences groups determined the roles and functions of each component of their profession. Utilizing these as a base, career entry competencies and corresponding curricular objectives were developed by each group.

The Rehabilitation Therapy group elected to wait for final results of existing delineation studies being conducted by the American Occupational Therapy Association and the American Physical Therapy Association, respectively, rather than design model articulated curricula for Kentucky.

2. Existing Curricula. Initially, current philosophies and goals of the educational institutions and programs were reviewed. Program materials were collected by each Discipline Advisory Group from participating and nonparticipating programs in each discipline. Data were gathered with a standard questionnaire regarding pre-professional and professional components of each curriculum as well as course outlines and course objectives where available. The questionnaire included course titles, clock hours, credit hours, percent of lecture, lab and/or clinical components per course, minimal acceptable grades, flexibility of sequencing in the overall curriculum, types and locations of clinical contracts and recommended general education courses.

The data provided an excellent opportunity for Discipline Advisory Group members to learn about other curricula. The results enabled the compilation of a specific comparative overview of the varying types and levels of curricula within the same discipline. Outstanding similarities and differences have been easily identified from the overviews.

3. Existing Articulation. "Articulation in learning implies connections which permit smooth transition from one educational component to another so that learning experiences build upon one another." (Dickey, 1980) The types of transition commonly focused on are:

1. From pre-professional to professional curricula
2. From an associate degree basic occupational preparation program to a baccalaureate program preparing students for expanded functions in the same occupation.
3. From an associate degree basic occupational preparation program to a baccalaureate basic occupational program for a higher level occupational title in the same discipline.

KAHP in conjunction with NCAHE, recognizes alternate learning modes to be equally a part of the "transitions" which must be included in articulation of learning:

- o from certificate to associate programs;
- o from bachelor's to graduate programs (a) in the same discipline and (b) in education, administration, or basic sciences;
- o from an occupational preparation program in one discipline to an occupational preparation program in another discipline;
- o from an occupational preparation program to general studies (for enrichment);
- o intrainstitutional transfer within the same major:
- o from a health-related job to a formal educational program;
- o from one course or program component to another.

Non-collegiate learning modes which vary even from discipline to discipline have not been well integrated into articulation of learning. However, the KAHP articulated model curricula include a mechanism by which non-collegiate learning experiences can be assessed and awarded comparable credit in a formal academic setting. The curriculum models in the form of educational objectives per level of practice are the core for developing equivalency exams as well as the articulated curricula.

Often programs and accrediting agencies judge the quality of a program by the number of formal credit hours spent in the program. In essence, this rationale states that the competency of the graduate is dependent upon time rather than content mastered. KAHP challenges this rationale with its articulated model curricula which are based upon academic principles of learning and relevance to their respective disciplines. National accrediting processes and guidelines cannot be ignored but who can afford the cost of unnecessary repetition in training?

ARTICULATION IN EDUCATIONAL PLANNING AND RESOURCE UTILIZATION

It has been apparent since KAHP's inception that there are interlocking activities essential to the project's success. Articulation in learning is based on acceptable role and function delineation. Educational planning and resource utilization must be incorporated with delineation results to link education to practice as recommended by NCAHE. KAHP addresses several areas which provide a support system for articulation to promote and maintain academic soundness and professional relevance.

1. Manpower. The Kentucky Council on Higher Education is working with the Kentucky Department for Human Resources to set up a system of data gathering to determine the manpower required to meet the need as well as the demand for services. The limitations of manpower projections are clearly recognized and stated by KAHP. For this reason a model is being developed which will provide a range of projection figures from which to make better informed decisions in planning for new or existing allied health programs.

2. Profiling Practicing Clinicians. In order to establish a current profile of Kentucky allied health practitioners, a survey instrument was developed. A standard questionnaire was devised with input from each Discipline Advisory Group providing discipline specific data needs. The questionnaire will be sent to a stratified sample of health care facilities by type, size and location of facility.

3. Graduate Follow-up. Like the manpower model and the practitioner profile, a statewide system of graduate follow-up must be formally established. Therefore, a model survey instrument was designed to gather the necessary information for planning and coordinating existing and future allied health education. Relevant discipline specific data needs were again identified by the Discipline Advisory Groups. The model survey instrument in the form of a questionnaire will be distributed to the selected allied health programs to specify other graduate follow-up data needs for programs which do not already collect such comprehensive data.

4. Admission Policies and Practices. Coordinating admission policies to identify and alleviate barriers to articulation was the purpose of the KAHP admissions data survey of the selected allied health education programs involved in or influenced by KAHP. A questionnaire was designed based on pertinent issues in allied health admission policies. (Dietrich, 1979). The information solicited included items related to accreditation status, selection criteria, selection process, non-collegiate learning credit and the treatment of alternates. A section was also included to ascertain transfer patterns among various Kentucky colleges and universities. Utilizing information derived from this survey will make it possible for each DAG to recommend uniform minimum admission guidelines for programs within each discipline.

5. Transfer Policies Between and Among Programs and Institutions. General transfer policies for Kentucky colleges and universities are described in the Transfer Guide, published by the Kentucky Council on Higher Education. This guide answers questions about transferring grades and credits for traditional college coursework and credits for competencies gained outside the classroom. However, program specific policies are not identified in the Transfer Guide. As a result, each Discipline Advisory Group has established discipline specific transfer policy data needs for the types and levels of curricula involved. It was concluded that each Discipline Advisory group could more efficiently identify and collect pertinent data which would specify facilitators and barriers to articulation for available resource utilization rather than use a standard format.

6. Future Trends in Health Care. While these methodologies can aid short-term and intermediate planning, additional information was needed on the potential changes in health care that might occur by the year 2000. In order to attain this information a Delphi Probe was constructed by the Technical Advisory Group and conducted on a national basis with additional representation from the World Health Organization. (Breagle, 1980) With the results of this study, Kentucky can broaden its scope as a microcosm of the much larger health care world.

7. Human Interaction. One of the most overwhelming issues of KAHP is dependent on human interaction. The progress of KAHP is the manner in which conflict evolves and the degree to which resolution occurs. The conflicts range from interpersonal feelings to inter-institutional discrepancies. Some of the common conflicts centered on were: degree of trust, professionalism, academic freedom, clarity of DAG Tasks, limitation of time, national organization trends and the frustrations of people forced to extensively plan when they are more action oriented. The vast network of individuals and institutions comprising KAHP necessitated clear lines of communication and it was imperative that they remain open. Collaboration resolved many of KAHP's conflicts, and communication was elemental to this process.

III. Summary The following is a comparison of selected primary recommendations from the National Commission on Allied Health Education with the Kentucky Allied Health Project activities.

PRIMARY RECOMMEDATION 1.0 - "Alliance in service and education should be strengthened, based on an appreciation of the interdependence of all health occupations and understanding of their roles, functions, and special contributions."

KAHP Activity - The continuous interaction among educators, administrators and clinicians has clarified the necessity for their alliance, as well as the many benefits to be derived from collaboration.

PRIMARY RECOMMENDATION 2.0 - "Education should be linked to practice through role delineations."

KAHP Activity - Role delineations are being used to design model curricula in each of the six disciplines. Nutrition/Dietetics and Respiratory Therapy are utilizing the HSMS Methodology since nationally accepted comprehensive role delineations have not been produced.

PRIMARY RECOMMENDATION 3.0 - "Allied Health education should prepare students who can meet standard performance objectives and adapt to changing health service needs; flexibility in the methods of preparation should be encouraged."

KAHP Activity - Articulation models are being constructed with the emphasis on competency-based evaluation. Non-traditional/experiential learning paths are incorporated as part of the model design.

PRIMARY RECOMMENDATION I2.0 - "The establishment, expansion, and termination of allied health programs should be based on manpower requirements, adequacy and efficient use of available resources, and collaboration within and among educational and other institutions."

KAHP Activity - An Evaluation and Research Group has developed a Manpower Projection Model, a Practitioner Profile and a Graduate Follow-up survey instrument.

PRIMARY RECOMMENDATION I3.0 - "Educational and collaborating institutions should adopt mechanisms to facilitate the removal of unnecessary barriers to student progress."

KAHP Activity - The primary purpose of KAHP is to develop and implement a model articulated system of allied health education which will provide career mobility in six selected allied health disciplines.

PRIMARY RECOMMENDATION I4.0 - "Information relating to administration and planning in allied health education should be collected and shared systematically."

KAHP Activity - Information relating to administration and planning in allied health is shared through: (1) Monthly meetings of the Allied Health Task Force and Discipline Advisory Groups; (2) KAHP Newsletter; (3) Liaison with state and national professional organizations and agencies.

For more information about KAHP please contact the Council on Higher Education, Frankfort, Kentucky, (502) 564-3745.

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